

Scaled data based on original data using  
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State  
Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: FAIL-SAFE

Report Number: P547263

Luminaire Tested: **FMR-24-4-LD4-4HI-35-UNV-81-84-EDD**

Issue Date: 6/15/2021

This test was performed under the Supervised Manufacturer's Testing Program. The results of this test have not been influenced by sources from within Cooper Lighting Solutions or from external interests.



**Test Information**

Test Method: LM-79-08  
Report Number: P547263  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2102-135-5)  
Test Lab: INNOVATION CENTER  
Issue Date: 6/15/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: FAIL-SAFE  
Catalog Number: FMR-24-4-LD4-4HI-35-UNV-81-84-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

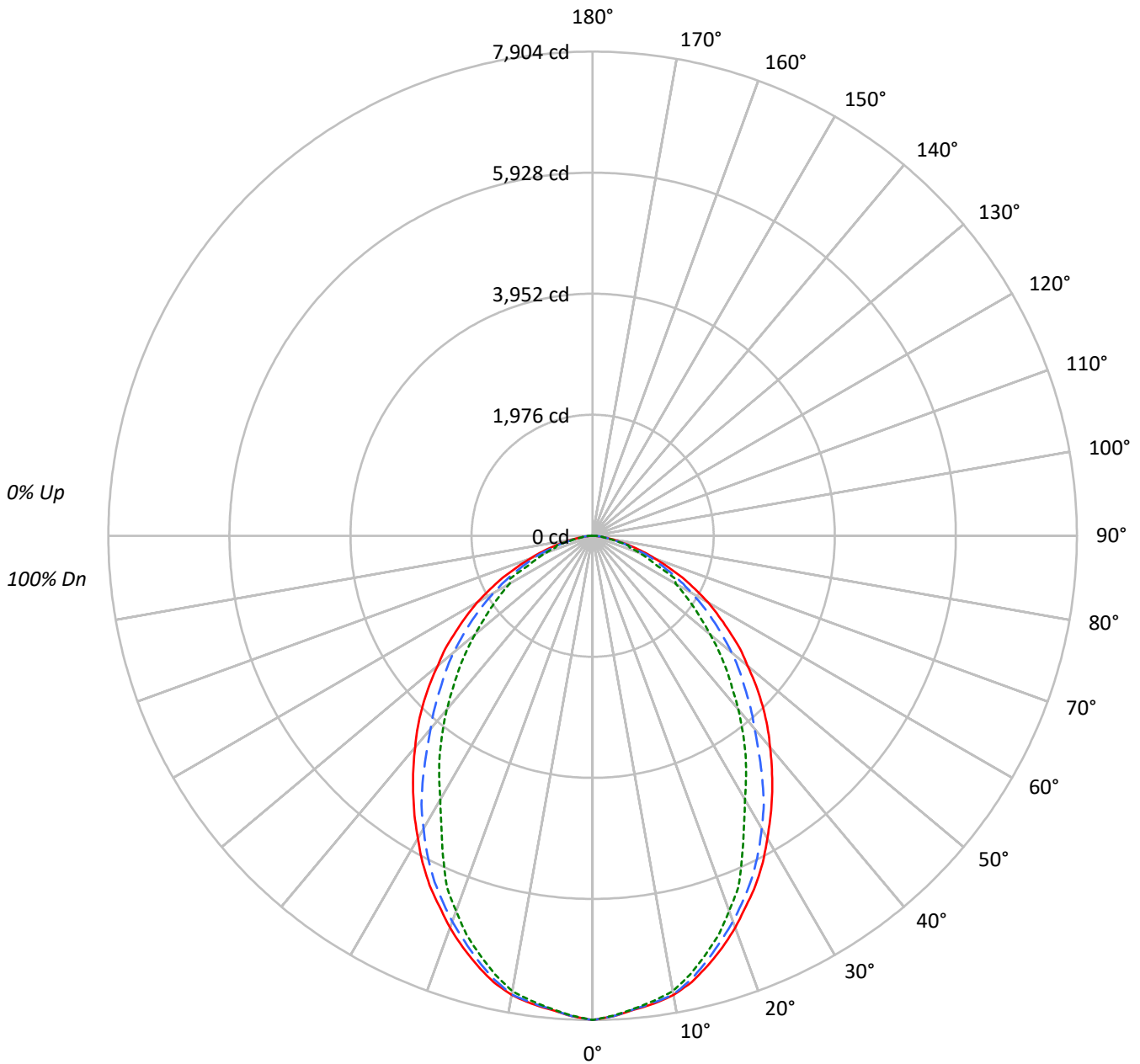
Lumens per Lamp: N/A  
Luminaire Lumens: 15517.0 lumens  
Efficiency: N/A  
Efficacy: 89.8 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 172.8  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT

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### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20									20									20									20									
RC	80									50									30									10									0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0																
RCR																																					
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100																			
1	110	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87																			
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75																			
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65																			
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56																			
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50																			
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44																			
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40																			
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36																			
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33																			
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30																			

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	10635	10635	10635
5°	10490	10478	10466
10°	10399	10387	10312
15°	10119	10017	9877
20°	9747	9590	9329
25°	9347	9143	8574
30°	8859	8575	7723
35°	8390	7925	7144
40°	7912	7222	6500
45°	7459	6677	5877
50°	6905	6197	5241
55°	6388	5616	4694
60°	5852	5016	4205
65°	5149	4393	3724
70°	4242	3846	3163
75°	3373	2945	3088
80°	2266	2124	1983
85°	1411	1694	1974



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	735.8	4.7
10°-20°	2019.3	13.0
20°-30°	2795.5	18.0
30°-40°	2980.9	19.2
40°-50°	2719.4	17.5
50°-60°	2130.4	13.7
60°-70°	1388.5	8.9
70°-80°	615.2	4.0
80°-90°	132.1	0.9
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	5550.6	35.8
0°-40°	8531.4	55.0
0°-60°	13381.2	86.2
0°-90°	15517.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	15517.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	7904	7904	7904	7904	7904	
5°	7767	7758	7758	7749	7749	737
15°	7264	7264	7191	7118	7091	2042
25°	6296	6259	6159	5940	5775	2890
35°	5108	5072	4825	4459	4350	3193
45°	3920	3838	3509	3216	3089	3020
55°	2723	2641	2394	2111	2001	2442
65°	1617	1526	1380	1407	1170	1594
75°	649	603	566	539	594	695
85°	91	100	110	119	128	127
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	7904.2	7904.2	7904.2	7904.2	7904.2
2.5°	7849.3	7849.3	7849.3	7840.2	7840.2
5°	7767.1	7757.9	7757.9	7748.8	7748.8
7.5°	7703.1	7694.0	7684.8	7675.7	7657.4
10°	7611.7	7611.7	7602.6	7556.9	7547.8
12.5°	7465.5	7456.4	7419.9	7355.9	7337.6
15°	7264.5	7264.5	7191.4	7118.3	7090.9
17.5°	7045.2	7036.1	6944.7	6871.6	6835.0
20°	6807.6	6789.3	6698.0	6579.2	6515.2
22.5°	6542.6	6542.6	6433.0	6277.6	6213.7
25°	6295.9	6259.4	6158.8	5939.5	5775.1
27.5°	6012.6	5957.8	5848.2	5537.5	5345.6
30°	5702.0	5674.5	5519.2	5117.1	4970.9
32.5°	5409.5	5363.9	5199.4	4779.0	4660.3
35°	5108.0	5071.5	4824.7	4459.2	4349.6
37.5°	4806.5	4760.8	4450.1	4157.7	4020.6
40°	4504.9	4450.1	4112.0	3847.0	3700.8
42.5°	4221.6	4148.5	3819.6	3536.3	3371.8
45°	3920.1	3837.9	3508.9	3216.5	3088.6
47.5°	3618.5	3545.4	3243.9	2942.4	2796.2
50°	3298.7	3234.8	2960.6	2659.1	2503.7
52.5°	3033.7	2933.2	2668.2	2366.7	2238.7
55°	2723.0	2640.8	2394.1	2110.8	2001.2
57.5°	2439.8	2357.5	2129.1	1864.1	1772.7
60°	2174.8	2056.0	1864.1	1635.7	1562.6
62.5°	1882.4	1791.0	1626.5	1434.6	1526.0
65°	1617.4	1526.0	1379.8	1407.2	1169.6
67.5°	1325.0	1279.3	1151.4	1023.4	986.9
70°	1078.3	1023.4	977.7	840.7	804.1
72.5°	858.9	804.1	740.2	667.1	639.6
75°	648.8	603.1	566.5	539.1	594.0
77.5°	447.7	429.5	402.1	374.6	365.5
80°	292.4	283.3	274.1	265.0	255.9
82.5°	173.6	173.6	173.6	173.6	173.6
85°	91.4	100.5	109.7	118.8	127.9
87.5°	54.8	54.8	64.0	73.1	82.2
90°	0.0	0.0	0.0	0.0	0.0



Report Generated By 670246072 / DESKTOP-MV3F9LC







— 0°-180°    - - 45°-225°    - - - - 90°-270°







(END OF REPORT)